DETERMINING MULTIPLE PRIMARIES
SOLID MALIGNANT TUMORS

Every effort should be made to identify separate primary tumors. The determination of the number of primary tumors a patient has is a medical decision, but operational rules are needed in order to ensure consistency of reporting by all institutions. Factors to consider include the site of origin, the date of diagnosis, the histologic type, the behavior of the neoplasm (in situ vs. invasive), and laterality. It is important to remember that in some cases different histologic terms are used to describe progressive stages of the same disease process.

Refer to specific guidelines in *Appendix E* for hematopoietic primaries and pages 13–16 in this appendix for specific guidelines for benign and borderline primary intracranial and central nervous system tumors (CNS).

Terms:

The words "**tumor**," "**neoplasm**," "**mass**," and "**lesion**" are used interchangeably throughout this manual.

The terms "**original**" and "**initial**" are synonymous.

Definitions:

Focal: Limited to one specific area

Foci/focus: The starting point of a disease process, a single cell

Laterality: the right or left side of the body or the right or left of a paired organ such as the right kidney or the left kidney. Unilateral describes a single organ/side. Bilateral describes both organs/sides.

Metachronous tumors: multiple tumors or lesions that occur greater than two months from the original/initial diagnosis

Multicentric: A primary tumor with satellites in surrounding tissue

Multifocal: Multiple tumors arising in two or more locations

Multiple primaries: two or more independent primary reportable neoplasms

Non-synchronous (Metachronous) tumors: multiple masses or lesions that occur greater than two months from the original/initial diagnosis

Paired Organ: two separate organs, a right and a left; for example: right breast and left breast

Paired Organ: two separate organs, a right and a left; for example: right breast and left breast

Primary site: the anatomical portion of the body where the cancer originated

Simultaneous tumors: multiple tumors identified at the time of diagnosis

Synchronous tumors: multiple tumors diagnosed within two months of the original/initial diagnosis

Single primary: one distinct reportable cancer

Single Tumor: a single lesion. A single tumor may **invade regional** organs by traveling along the mucosa or extending through the organ wall into **regional** tissue or organs. A single tumor may have **multiple or mixed** histologies.

Examples:

a. Colon primary: a large tumor originating in the ascending colon with *intramucosal* spread into the transverse colon. Abstract as a single primary and record the primary site as ascending colon.

b. The patient has multiple papillary urothelial bladder tumors with in situ spread into the ureters. Abstract as a single primary and record the primary site as bladder. (Mucosal spread of a urinary tract tumor may be called "field effect" or "regional diathesis").

HOW TO DETERMINE SAME VS. DIFFERENT PRIMARY SITE (BASED ON ICD-O-3 TOPOGRAPHY CODE)

1. The **third numeric digit** after the 'C' describes a subsite of the organ; it is **not used** to define individual (different) sites, other than the exceptions listed.

   Example:

   C50_ is the code for breast and the third numeric digit, C505 describes a subsite of the breast, the lower-outer quadrant.

   EXCEPTION: *For the following sites, a difference in the third numeric digit designates a different primary site:*

   Colon (C18_)
   Anus and anal canal (C21_)
   Bones, joints, and articular cartilage (C40_ –C41_)
   Melanoma of skin (C44_)
   Peripheral nerves and autonomic nervous system (C47_)
   Connective, subcutaneous and other soft tissues (C49_)

Examples:

a. The patient has a melanoma on the skin of the scalp (C444) and another melanoma on the calf of the right leg (C447). These are two different primary sites because the third numeric digit of the site code is different.

b. The patient has an invasive adenocarcinoma in the cecum (C180) and a separate invasive adenocarcinoma in the sigmoid colon (C187). Do not code to colon (C189). These are two different primaries and two separate abstracts must be submitted.

2. If the **first two numeric digits** after the C are **identical**, it is the **same site**.

   Example:

   If there is a tumor in the lower outer quadrant of the right breast (C505) and a separate tumor in the upper outer quadrant of the right breast, (C504), it is the same site.

   ***Possible EXCEPTION: Paired organ**: There are specific rules for paired organs. See the Multiple Primary Rules on page D7–D9.*

3. If there is **any difference** in the first two numeric digits after the C, it is a **different** site.

   Example:

   Stomach, NOS (C169) and small intestine, NOS (C179) are different sites because the second numeric digit is not identical.

   ***EXCEPTION: ICD-O-2/ICD-O-3 groupings**: The second edition of the International Classification of Diseases for Oncology (ICD-O-2) split several site codes into categories having differences in the second numeric digit after the C. The second and third edition ICD-O topography codes are identical. When a patient has **multiple independent** tumors, any combination of site codes within the same row in the table are the same primary site. Use this table for in situ and/or invasive tumors diagnosed prior to 2007. (Do not use this table for a single tumor with extension into another site).*

SEER Site Grouping Table

The purpose of this table is to show which group sites are treated as a single site when abstracting a case. **Do not use for cases diagnosed on or after 1/1/2007.**

ICD-O-3 CODE	SITE GROUPINGS	CODE TO
C01 C02	Base of tongue Other and unspecified parts of tongue	C029 Tongue, NOS
C05 C06	Palate Other and unspecified parts of mouth	C069 Mouth, NOS
C07 C08	Parotid gland Other and unspecified major salivary glands	C089 Major salivary glands, NOS
C09 C10	Tonsil Oropharynx	C109 Oropharynx, NOS
C12 C13	Pyriform sinus Hypopharynx	C139 Hypopharynx, NOS
C23 C24	Gallbladder Other and unspecified parts of the biliary tract	C249 Biliary tract, NOS
C30 C31	Nasal cavity and middle ear Accessory sinuses	C319 Accessory sinuses, NOS
C33 C34	Trachea Bronchus and lung	C349 Lung, NOS
C37 C380 C381–3 C388	Thymus Heart Mediastinum Overlapping lesion of heart, mediastinum, and pleura	C383 Mediastinum, NOS
C51 C52 C577 C578–9	Vulva Vagina Other specified female genital organs Unspecified female genital organs	C579 Female genital, NOS
C569 C570 C571 C572 C573 C574	Ovary Fallopian tube Broad ligament Round ligament Parametrium Uterine adnexa	Code C569 (ovary) when ovary is one of the involved sites Code C579 (female genital, NOS) when only non-ovarian sites are involved.
C60 C63	Penis Other and unspecified male genital organs	C639 Male genital, NOS

ICD-O-3 CODE	SITE GROUPINGS	CODE TO
C64 C65 C66 C68	Kidney Renal pelvis Ureter Other and unspecified urinary organs	Code C649 when one of the involved organs is kidney Code C689 (Urinary system, NOS) when only non-kidney sites are involved
C74 C75	Adrenal gland Other endocrine glands and related structures	C759 Endocrine gland, NOS

Note: *This table is* ***not*** *identical to the table in ICD-O-3. Two combinations of sites are listed in the ICD-O-3 but not in the SEER table: C19 (rectosigmoid) and C20 (rectum) and C40 (bones of limbs) and C41 (bones of other sites). Multiple tumors in the rectosigmoid and rectum are different sites. Multiple tumors in C40 and C41 are different sites.*

HOW TO DETERMINE SAME VS. DIFFERENT HISTOLOGY (BASED ON ICD-O-3 HISTOLOGY CODES)

1. If the **first three digits of the ICD-O-3 histology codes are the same,** it is the same histology.

EXCEPTION: *The ICD-O-3 histology code for non-small cell carcinoma (8046) is a separate morphology group from the small cell histologies (codes 8040 – 8045). Even though the first three digits are the same, they are different histologies.*

MULTIPLE PRIMARY RULES FOR SOLID TUMORS

Definitions:

Simultaneous tumors: identified at the same time of diagnosis.

Synchronous tumors: diagnosed within two months of the original/initial diagnosis.

The multiple primary rules are presented in two formats, text and table. Note that the rule numbers in both formats are identical.

Use the following rules to determine whether to report a single primary or multiple primaries. Coding rules for the data items mentioned such as primary site, histology, laterality, etc. are not described in detail in this section; refer to the instructions for coding each data item elsewhere in this manual.

Rules for Single Tumor:

Rule 1: **A single lesion composed of one histologic type is a single primary, even if the lesion**

crosses site boundaries.

Examples:

a. A single lesion involving the tongue and floor of mouth is one primary.

b. A single, large mucinous adenocarcinoma involving the sigmoid and descending colon segments is one primary.

Rule 2: A single lesion composed of multiple (different) histologic types is a single primary even if it crosses site boundaries.

The most frequent combinations of histologic types are listed in ICD-O-3. For example, combination terms such as "adenosquamous carcinoma (8560/3)" or "small cell-large cell carcinoma (8045/3)" are included. A single lesion composed of mixed or multiple histologies is a single primary.

Examples:

a. A single lesion containing both embryonal cell carcinoma and teratoma is a single primary and would be coded to 9081/3, mixed embryonal carcinoma and teratoma.

b. A single lesion of the liver composed of neuroendocrine carcinoma (8246/3) and hepatocellular carcinoma (8170/3) is a single primary and would be coded to the more specific histology, neuroendocrine carcinoma 8246/3.

Rules for Multiple Tumors:

Rule 3a: Simultaneous multiple lesions of the same histologic type within the same site (in other words, multi*focal* tumors in a single organ or site) are a single primary. If one lesion has a behavior code of in situ /2 and the other lesion has a behavior code of malignant /3, this is a single primary whose behavior is malignant /3.

Examples:

a. At nephrectomy, two separate, distinct foci of renal cell carcinoma are found in the specimen, in addition to the 3.5 cm primary renal cell carcinoma. Abstract as a single primary.

b. At mastectomy for removal of a 2 cm invasive ductal carcinoma, an additional 5 cm area of intraductal carcinoma was noted. Abstract as one invasive primary.

Rule 3b: If a new cancer of the same histology as an earlier one is diagnosed in the same site within two months, this is a single primary cancer.

Example:

Adenocarcinoma in adenomatous polyp (8210) in sigmoid colon removed by polypectomy in December 2005. At segmental resection in January 2006, an adenocarcinoma in a tubular adenoma (8210) adjacent to the previous polypectomy site was removed. *Count as one primary.*

Rule 4: If both sides of a paired organ are involved with the same histologic type within two months of the initial diagnosis

1. It is one primary if the physician states the tumor in one organ is metastatic from the other.

   a. Code the laterality to the side where the primary originated

   b. Code the laterality as 4 if it is unknown in which side the primary originated

2. Code as multiple primaries if the physician states these are independent primaries or when there is no physician statement that one is metastatic from the other.

EXCEPTION: *Simultaneous bilateral involvement of the* ***ovaries*** *with the same histology is one primary and laterality is coded 4 when it is unknown which ovary was the primary site.*

EXCEPTION: *Bilateral* ***retinoblastomas*** *are a single primary with laterality of 4.*

EXCEPTION: *Bilateral* ***Wilms*** *tumors are always a single primary with laterality of 4.*

Rule 5: If a tumor with the same histology is identified in the same site at least two months after the initial/original diagnosis **(metachronous)**, this is a **separate primary.**

EXCEPTION**:** *This is a single primary only when the physician documents that the initial/original tumor gave rise to the later tumor*.

Examples:

a. Infiltrating duct carcinoma of the upper outer quadrant of the right breast diagnosed March 2005 and treated with lumpectomy. Previously unidentified mass in lower inner quadrant right breast noted in July 2005 mammogram. This was removed and found to be infiltrating duct carcinoma. Abstract the case as two primaries.

b. During the workup for a squamous cell carcinoma of the vocal cord, a second squamous cell carcinoma is discovered in the tonsillar fossa. Abstract as two primaries.

EXCEPTION: *Effective with cases diagnosed January 1995 and later, if an in situ tumor is followed by an invasive cancer in the same site more than two months apart, report as two primaries even if stated to be a recurrence. The invasive primary should be reported with the date of the invasive diagnosis. (**Note:** The purpose of this guideline is to ensure that the case is counted as an incident case (i.e., invasive) when incidence data are analyzed.)*

EXCEPTION: *Report as a single primary and prepare a single abstract for the first invasive lesion:*

- Multiple invasive adenocarcinomas of the prostate (C619)
- Multiple invasive bladder cancers (C670–C679) with histology codes 8120–8130

Examples:

a. Urothelial bladder tumor removed by transurethral resection of the bladder (TURB). At three month check-up, a new urothelial tumor is removed. Abstract as one primary of the bladder.

b. Patient has elevated PSA and a needle biopsy that shows adenocarcinoma in the right lobe of the prostate. Patient and clinician opt for "watchful waiting." Four months later, PSA is higher and patient has a second biopsy, which shows adenocarcinoma in the left lobe. Abstract as one primary of the prostate.

EXCEPTION: *Kaposi sarcoma (9140) is reported only once and is coded to the site in which it arises. Code the primary site to skin (C44_) when Kaposi sarcoma arises in skin and another site simultaneously. If no primary site is stated, code the primary site to skin, NOS (C449).*

Rule 6: Multiple synchronous lesions of different histologic types within a single paired or unpaired organ are separate primaries.

Example:

A patient undergoes a partial gastrectomy for adenocarcinoma of the body of the stomach. In the resected specimen, the pathologist finds both adenocarcinoma and nodular non-Hodgkin lymphoma. Abstract two primaries.

EXCEPTION: *Multiple lesions in a single site occurring within two months: if one lesion is carcinoma, NOS, adenocarcinoma, NOS, sarcoma, NOS, or melanoma, NOS and the second lesion is more specific, such as large cell carcinoma, mucinous adenocarcinoma, spindle cell sarcoma, or superficial spreading melanoma, abstract as a single primary and code the histology to the more specific term.*

EXCEPTIONS: *For colon and rectum tumors:*

a. When an adenocarcinoma (8140/_; in situ or invasive) arises in the same segment of the colon or rectum as an adenocarcinoma in a polyp (8210/_, 8261/_, 8263/_), abstract a single primary and code the histology as adenocarcinoma (8140/_).

b. When there is familial adenomatous polyposis (FAP) (8220) with malignancies arising in polyps in the same or multiple segments of the colon or rectum, abstract as a single primary.

EXCEPTION: *There are certain sites in which multiple foci of tumor and multiple histologic types are commonly found together. These multifocal, multi-histologic tumors occur most frequently in the thyroid (papillary and follicular), bladder (papillary and transitional cell) and breast (combinations of ductal and lobular and combinations of Paget disease and ductal/intraductal). They are abstracted as a single primary with a mixed histology. In such cases, consult ICD-O-3 for a list of the most frequent histologic combinations.*

Examples:

a. A thyroid specimen contains two separate carcinomas— one papillary and the other follicular. Abstract one primary with the histology as papillary and follicular (8340).

b. Abstract one primary when **multiple bladder** tumors are **papillary urothelial** (8130) and/or **transitional** cell (8120).

c. A left mastectomy specimen shows lobular carcinoma in the upper inner quadrant and intraductal carcinoma in the lower inner quadrant. Abstract one primary with histology as lobular and ductal (8522/3).

d. A right mastectomy specimen shows Paget's disease in the nipple and a separate underlying ductal carcinoma. Abstract one primary. Assign the combination code 8543 (Ductal and Paget disease).

Rule 7: Multiple synchronous lesions of different histologic types in paired organs are multiple primaries. If one histologic type is reported in one side of a paired organ and a different histologic type is reported in the other paired organ, these are two primaries unless there is a statement to the contrary.

Example:

If a ductal tumor occurs in one breast and a lobular tumor occurs in the opposite

breast, these are two separate primaries.

Rule 8: Multiple metachronous lesions of different histologic types within a single site are separate primaries.

Rule 9: Multiple lesions of different histologic types occurring in different sites are separate primaries whether occurring simultaneously or at different times.

Examples:

a. In 2005, the patient had a mucin-producing carcinoma of the transverse colon. In 2006, the patient was diagnosed with an astrocytoma of the frontal lobe of the brain. Abstract as separate primaries.

b. During the workup for a transitional cell carcinoma of the bladder, the patient has a TURP that shows adenocarcinoma of the prostate. Abstract as separate primaries.

Rule 10: Multiple lesions of the same histologic type occurring in different sites are separate primaries unless stated to be metastatic.

Table of Rules to Determine Multiple Primaries for Solid Tumors :

RULE	TUMORS	SITE(S)	HISTOLOGY	VARIABLES	TIMING	SINGLE VS. MULTIPLE PRIMARY
1	Single	NA	NA		NA	Single
2	Single	NA	Different		NA	Single
3a	Multiple	Same	Same	Non-paired or only one side of paired organ	Simultaneous or synchronous	Single
3b	Multiple	Same	Same	Non-paired or only one side of paired organ	Simultaneous or synchronous	Single
4	Multiple	Same (bilateral)	Same	Both sides of paired organ involved	Simultaneous or synchronous	Multiple unless physician states one is metastatic. ***EXCEPTION:*** Bilateral tumors: Ovary (same histology), retinoblastoma, or Wilms tumor are a single primary
5	Multiple	Same	Same		Synchronous	Multiple unless physician states recurrent or metastatic ***EXCEPTIONS:*** 1. Report as a **singl**e primary: a. Invasive prostate with histology (8140) b. Invasive bladder with histologies (8120–8130) c. Kaposi sarcoma (9140) 2. For all sites: Report as multiple primaries: In situ followed by invasive **even if stated to be recurrence**.

RULE	TUMORS	SITE(S)	HISTOLOGY	VARIABLES	TIMING	SINGLE VS. MULTIPLE PRIMARY
6	Multiple	Same	Different	Single paired or unpaired organ	Simultaneous or synchronous	Multiple ***EXCEPTIONS:*** The following are single primaries: 1. One histology is a more specific histology than the other (NOS and specific). 2. Colon: a. (Adeno) carcinoma and (adeno) carcinoma arising in a polyp. b. Familial adenomatous polyposis (FAP) with malignancies arising in polyps. 3. Histology combinations commonly found together a. Thyroid (follicular and papillary) b. Bladder (transitional and papillary) 4. Breast: if two lesions in one breast are: a. Lobular and ductal b. Paget disease and ductal or intraductal
7	Multiple	Same	Different	Both sides of paired organ	Simultaneous or synchronous	Multiple ***EXCEPTION:*** Report as single: 1. If stated to be metastatic

RULE	TUMORS	SITE(S)	HISTOLOGY	VARIABLES	TIMING	SINGLE VS. MULTIPLE PRIMARY
8	Multiple	Same	Different		More than 2 months after original/initial tumor	Multiple
9	Multiple	Different	Different		NA	Multiple
10	Multiple	Different	Same		NA	Multiple unless stated to be metastatic ***EXCEPTION:*** Wilms tumor

DETERMINING MULTIPLE PRIMARIES FOR BENIGN AND BORDERLINE PRIMARY INTRACRANIAL AND CNS TUMORS (C70.0–C72.9, C75.1–C75.3):

Definitions:

Same site: the first two numeric digits of the ICD-O-3 topography code are identical.

Different site: the first two numeric digits of the ICD-O-3 topography code are different.

Timing: the amount of time between the original and subsequent tumors is not used to determine multiple primaries because the natural biology of non-malignant tumors is that of expansive, localized growth.

HOW TO DETERMINE SAME VS DIFFERENT HISTOLOGIES (BASED ON HISTOLOGIC GROUPINGS):

When there are **multiple tumors**, use the following table to determine if the tumors are the same histology or different histologies.

Histologic groupings to determine same histology for non-malignant brain tumors:

Choroid Plexus neoplasms	9390/0, 9390/1
Ependyomas	9383, 9394, 9444
Neuronal and neuronal-glial neoplasms	9384, 9412, 9413, 9442, 9505/1, 9506
Neurofibromas	9540/0, 9540/1, 9541, 9550, 9560/0
Neurinomatosis	9560/1
Neurothekeoma	9562
Neuroma	9570
Perineurioma, NOS	9571/0

Instructions for Using Histologic Group Table

1. **Both** histologies are listed **in** the **table**

   a. Histologies that are in the same **grouping** or row in the table are the **same histology**.

   b. Histologies listed in **different groupings** in the table are **different histologies**.

2. One or both of the **histologies** is **not** listed **in** the **table**

   a. If the **ICD-O-3 codes** for both histologies have the identical first three digits, the histologies are the same.

   b. If the first three digits of the **ICD-O-3** histology codes are different, the histology types are different.

MULTIPLE PRIMARY RULES FOR BENIGN AND BORDERLINE PRIMARY INTRACRANIAL AND CNS TUMORS:

The multiple primary rules are presented in two formats, text and table. Note that the rule numbers in both formats are identical.

Use the following rules to determine whether to report a single primary or multiple primaries. Coding rules for the data items mentioned, such as primary site, histology, laterality, etc., are not described in detail here; refer to the instructions in the Cancer Information section of the handbook.

Note: *If there is a* ***single tumor****, it is always a* ***single*** *primary.*

Rule 1: Multiple non-malignant tumors of the **same histology** that recur in the **same site** and **same side** (laterality) as the original tumor are recurrences (single primary) even after many years.

Example:

Patient had a desmoplastic infantile astrocytoma (9412/1) of the cerebellum (C716) diagnosed on 2/1/04 and a glangliogliomа (9505/1) of the brain stem (C717) diagnosed on 5/12/06.

Rationale: Because 9412/1 and 9505/1 are both in the same group on the nonmalignant histologic group table they are considered the same histology. The first two numeric digits of the ICD-O-3 topography codes for the sites, cerebellum and brain stem, are identical so the sites are the same. The two sites are not divided into sides so the laterality is the same. Because the sites, histologies and laterality are the same regardless of when the recurrence occurred, the tumors are considered one

primary and one abstract is completed.

Rule 2: Multiple non-malignant tumors of the **same histology** that recur in the **same site** and it is unknown if it is the same side (laterality) as the original tumor are recurrences (single primary) even after 20 years.

Example:

An acoustic neuroma (9560/0) was diagnosed in the right acoustic nerve (C724) on 1/15/04. A schwannoma (9560/0) of the acoustic nerve, NOS (9560/0), was diagnosed on 12/22/05.

Rationale: Acoustic Neuroma and schwannoma have the same histology code. Both tumors occurred in the acoustic nerve, which is considered the same site even though the laterality of the second tumor is unknown. This is one primary, regardless of when the recurrence was diagnosed.

Rule 3: Multiple non-malignant tumors of the same histology in **different sites** of the CNS are separate (multiple) primaries.

Example:

A dysembryoplastic neuroepithelial (9413/0) tumor of the hypoglossal nerve (C725) was diagnosed on 3/1/04, and a medullocytoma (9506/1) of the cerebellum (C716) was diagnosed on 4/12/04.

Rationale: The histologies are the same because they are found in the same group on the nonmalignant CNS histologic group table. However, the sites are different because there is a difference in the first two numeric digits of the ICD-O-3 topography codes. Because there is a difference in the sites of the two tumors, they are considered two primaries and two abstracts must be completed.

Rule 4: Multiple non-malignant tumors of the same histology in **different sides** (laterality) of the CNS are separate (multiple) primaries.

Example:

A meningioma (9530/0) of the right cerebral meninges (C700) is diagnosed 1/10/04. A meningioma (95300) of the left cerebral meninges (C700) is diagnosed the same day.

Rationale: The histologies and sites are the same, but the laterality is different. These are two different primaries and two abstracts should be completed.

Rule 5: Multiple non-malignant tumors of different histologies are separate (multiple) primaries.

Example:

A patient was diagnosed with subependymoma (9383/1) of the ventricle (C715) on 7/3/04. On 10/1/05 patient was diagnosed with subependymal giant cell astrocytoma (9384/1) of the cerebellum (C716).

Rationale: Because the two histologies are in different groups on the nonmalignant histologic group table, the histologies are different and these are two separate primary tumors. An abstract for each primary should be completed.

Table of Rules to Determine Multiple Primaries for Benign and Borderline Primary Intracranial and CNS Tumors:

RULE #	SITE	LATERALITY	HISTOLOGY	PRIMARY(IES)
1	Same	Same	Same	Single
2	Same	Unknown	Same	Single
3	Different	Any	Same	Multiple
4	Same	Different sides of the same site in the CNS	Same Multiple	
5	Any Any		Different	Multiple